

CLAIMS

1. A semiconductor switch comprising:
a normally on type FET; and
5 first and second normally off type FETs which are connected to the normally on type FET in series,
wherein the normally on type FET is connected between the first normally off type FET and the second normally off type FET.
- 10 2. A semiconductor switch comprising:
a plurality of series connected normally on type FETs; and
first and second normally off type FETs which are connected to the plurality of normally on type FETs in series,
wherein the plurality of normally on type FETs are connected between the first
15 normally off type FET and the second normally off type FET.
3. The semiconductor switch according to claims 1 or 2, further comprising control means operative to turn on and turn off the first and second normally off type FETs for thereby turning on or turning off the normally on type FET.
- 20 4. The semiconductor switch according to claim 3, wherein the control means comprises:
a first diode having one electrode connected to a source of the first normally off type FET;
25 first current supply means for supplying a current to the first diode;
a second diode having one electrode connected to a source of the second normally off type FET and having the other electrode connected to the other electrode of the first diode; and
second current supply means for supplying a current to the second diode;
30 wherein a junction between the other electrode of the first diode and the other

electrode of the second diode is connected to a gate of the normally on type FET.

5. The semiconductor switch according to claim 3, wherein the control means comprises:

- 5 a first diode having one electrode connected to a source of the first normally off type FET;
- a second diode having one electrode connected to a source of the second normally off type FET and having the other electrode connected to the other electrode of the first diode;
- 10 a resistor connected between a junction between the other electrode of the first diode and the other electrode of the second diode and a gate of the normally on type FET;
- a third diode connected between a gate of the normally on type FET and a gate of the first normally off type FET; and
- 15 a fourth diode connected between the gate of the normally on type FET and the gate of the second normally off type FET.

6. The semiconductor switch according to claim 4, further comprising a direct current power supply by which a direct current is applied to the gate of the
20 normally on type FET.

7. The semiconductor switch according to claims 1 or 2, wherein the control means comprises:

- a first switch having a first electrode connected to a source of the first normally
25 off type FET; and
- a second switch having a third electrode connected to a source of the second normally off type FET and a fourth electrode connected to a second electrode of the first switch;
- wherein a junction between the second electrode of the first switch and the
30 fourth electrode of the second switch is connected to a gate of the normally on

type FET;

whereby one of the first and second switches, which is connected to one of the first and second normally off type FETs of which source potential is low, is turned on whereas the other one of the first and second switches, which is
5 connected to the other one of the first and second normally off type FETs of which source potential is high, is turned off.

8. The semiconductor switch according to any one of claims 1 to 7, wherein the normally on type FET includes a compound semiconductor and the first and
10 second normally off type FETs include Si-semiconductor.

9. The semiconductor switch according to any one of claims 1 to 7, wherein the normally on type FET includes a MES FET.

15 10. The semiconductor switch according to any one of claims 1 to 7, wherein the normally on type FET includes a high voltage semiconductor FET and the first and second normally off type FETs include a FET with low voltage and low on-resistance.